Campylobacteriosis

1. DISEASE REPORTING

A. Purpose of Reporting and Surveillance

1. To determine if there is a source of infection of public health concern (e.g., a commercial raw milk dairy or public water supply) and to stop transmission from such a source.
2. When the source of infection appears to pose a risk to only a few individuals (e.g., a puppy with diarrhea or a private water supply), to inform those individuals how they can reduce their risk of exposure.
3. To identify outbreaks and other undiagnosed cases.

B. Legal Reporting Requirements

1. Health care providers: notifiable to local health jurisdiction within 3 work days.
2. Hospitals: notifiable to local health jurisdiction within 3 work days.
3. Laboratories: no requirements for reporting.
4. Local health jurisdictions: notifiable to the Washington State Department of Health (DOH) Communicable Disease Epidemiology Section (CDES) within 7 days of case investigation completion or summary information required within 21 days.

C. Local Health Jurisdiction Investigation Responsibilities

1. Administer appropriate infection control recommendations (see Section 6A).
2. Report all confirmed and probable cases to CDES (see definitions below). Complete the campylobacteriosis case report form (www.doh.wa.gov/notify/forms/campy.doc) and enter the data into the Public Health Issues Management System (PHIMS).

2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Campylobacter are gram-negative bacteria. Although several species of *Campylobacter* can cause human illness, *C. jejuni* is the most common cause of gastroenteritis. Rarely, infections are reported due to *C. coli*, *C. larii*, *C. fetus*, and *C. upsaliensis*.

B. Description of Illness

C. jejuni can cause a spectrum of disease ranging from uncomplicated gastroenteritis to fulminant disease similar to severe ulcerative colitis. Typical symptoms include diarrhea (often bloody), fever and abdominal pain. Many patients report prodromal symptoms of fever, malaise, headache, or myalgias. Symptoms usually persist less than one week. Invasive disease is uncommon, even in neonates.

C. Campylobacteriosis in Washington State

CDES receives approximately 900 to 1150 reports of campylobacteriosis per year. Potential sources of infection reported by Washington residents include poultry, animals, and contaminated food or water.

D. Reservoirs

Campylobacter organisms are found in the gastrointestinal tract of domestic and wild animals and birds; notably cattle, poultry, and dogs.

E. Modes of Transmission

Transmission is fecal-oral. Most transmission is probably foodborne, reflecting inadequate cooking or mishandling of contaminated foodstuffs. Commonly recognized vehicles or mechanisms include:

1. handling or eating undercooked/raw poultry or meat;
2. unpasteurized (raw) milk or dairy products;
3. contaminated and inadequately treated drinking water;
4. contact with animals, especially young animals with diarrhea;
5. contact with poultry.

Person-to-person transmission is uncommon, probably reflecting a high infectious dose.

F. Incubation Period

1–10 days; usually 2–5 days

G. Period of Communicability

The organism is shed in the feces for a few days to a few weeks, but direct person-to-person transmission is surprisingly uncommon (with the possible exception of contact with infected infants and incontinent adults). A chronic carrier state is unlikely. Most patients treated with antibiotics stop shedding after 72 hours of treatment.

H. Treatment

Fluid and electrolyte replacement (oral or IV) is the mainstay of treatment for persons with campylobacteriosis. Erythromycin or azithromycin can shorten the duration of illness when given early in the infection. Treatment is primarily indicated for persons experiencing high fever, bloody diarrhea, or more than eight stools per day, or for those whose symptoms are prolonged or worsening at the time of diagnosis. Antimicrobials do not prolong the period of shedding as with salmonellosis.

3. CASE DEFINITIONS

A. Clinical Criteria for Diagnosis

An infection that may result in diarrheal illness of variable severity.

B. Laboratory Criteria for Diagnosis

Isolation of *Campylobacter* from any clinical specimen.

C. Case Definition

1. **Probable**: a clinically compatible case that is epidemiologically linked to a confirmed case.
2. **Confirmed**: a case that is laboratory confirmed.

4. DIAGNOSIS AND LABORATORY SERVICES

A. Diagnosis

The diagnosis of campylobacteriosis is most commonly made by isolation of *Campylobacter* from stool. Isolating the organism from stool requires special techniques that may not be routinely performed in some laboratories.

B. Services Available at the Washington State Public Health Laboratories (PHL)

Laboratories are not required to submit isolates to PHL. In an outbreak or other special situation, PHL can perform stool culturing for *Campylobacter* species, isolate identification and speciation, and pulsed field gel electrophoresis (PFGE) analysis. Contact CDES for approval prior to submitting specimens.

C. Specimen Collection

For stool culture, use a sterile applicator swab to collect stool, insert the swab into Cary-Blair transport medium, push the cap on tightly, label the tube, and mail immediately.

Please enclose a completed PHL Enteric Bacteriology form (available at: http://www.doh.wa.gov/EHSPHL/PHL/Forms/EntericBacteriology.pdf) with all isolates and stool specimens.

5. ROUTINE CASE INVESTIGATION

A. Identify Potential Sources of Infection

Ask about possible exposures 1–10 days before onset, including:

1. Any contacts or household members with a similar illness. Obtain the name, phone number or address, and clinical information of the ill person. Anyone meeting the probable case definition should be reported and investigated in the same manner as a confirmed case. It is not necessary to get stool cultures on such individuals unless a dairy, public water supply, or commercial product/establishment is a likely source of infection.
2. Source(s) of drinking water as well as water from streams or lakes (either consumed purposefully or accidentally during work or sports activity). Water used only after boiling need not be included.
3. Consumption of unpasteurized milk. Identify the brand and/or source. If a commercial raw milk dairy is implicated, call CDES.
4. Handling or eating raw/undercooked poultry or meat.
5. Restaurant meals. Obtain the name of the restaurant, and date and location of the meal.
6. Public gathering where food was consumed. Obtain the date, location, and sponsor of the event.
7. Contact with pets, poultry, or other animals. Ask whether the animal has recently experienced diarrhea.
8. Travel outside Washington or the United States. Determine dates of travel.
9. Contact with diapered children or incontinent adults with diarrhea.

B. Environmental Evaluation

A sanitary inspection is indicated if a commercial food service facility, commercial dairy, or public water supply is suspected as the source of the infection.

6. CONTROLLING FURTHER SPREAD

A. Infection Control Recommendations

1. Hospitalized patients should be treated using standard precautions. Contact precautions should be used for diapered or incontinent persons for the duration of the illness or to control institutional outbreaks.
2. Although *Campylobacter* are not easily spread from person to person, the case should be educated regarding effective hand washing, particularly after using the toilet, changing diapers, and before preparing or eating food.
3. School Restrictions: Children should not attend school as long as they have diarrhea.
4. Work or Child Care Restrictions: Persons should not work as food handlers, child care or health care workers, or attend child care as long as they have diarrhea. It is not necessary to obtain negative stool cultures before returning to work or child care as long as diarrhea has resolved and the individual is otherwise well.
5. If a suspected source of infection is identified and has the potential for transmitting infection to a defined population, advise those individuals on measures to avoid exposure (e.g., boil water or drink bottled water until private well is decontaminated).

B. Case Management

Stool cultures to document that fecal shedding of the organism has stopped are not routinely indicated.

C. Contact Management

Contacts with diarrhea should not work as food handlers, child care workers, or health care workers or attend school or child care. Cultures to confirm the diagnosis in epi-linked contacts is not warranted unless a dairy, public water supply, or commercial product/establishment is a likely source of infection.

D. Environmental Measures

If indicated, give advice on decontaminating a private drinking water supply and/or proper cooking and food handling practices to prevent infection.

7. MANAGING SPECIAL SITUATIONS

A. Possible Foodborne or Waterborne Outbreaks

C. jejuni is a frequent cause of foodborne disease, typically with home preparation errors. Call CDES immediately if you suspect a common-source outbreak.

B. Cases Linked to Raw Milk Products

Environmental evaluation of the dairy will be a necessary part of any further investigation. Dairy investigations will be conducted in cooperation with the Washington State Department of Agriculture.

C. Case Resides at a Health Care or Residential Care Facility

Determine if there has been any unusual incidence of diarrheal illness within the past month. If so, investigate these reports to identify possible common-source outbreaks or any continuing sources of exposure. If indicated, conduct a sanitary inspection of the facility. The extent of further investigation depends on circumstances.

8. ROUTINE PREVENTION

A. Immunization Recommendations: None

B. Prevention Recommendations:

Advise individuals on measures to avoid further or future exposures including:

1. Wash hands after handling pets, fowl, other animals, raw meat and poultry, and always before food preparation.
2. Exercise care when handling or cleaning up after pets with diarrhea.
3. Avoid drinking or swallowing untreated surface water. Water should be brought to a boil or treated with disinfectants.
4. Avoid unpasteurized milk.
5. Avoid eating raw or undercooked poultry and meat.
6. Avoid cross-contamination of utensils or foods that will be served without further cooking; wash cutting boards and utensils with soap and water after contact with raw poultry.
7. Wash hands after using the toilet or changing diapers.

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UPDATES